

REMARKS

By this Amendment, claims 1, 9-11, 15 and 24-26 have been amended, and new claims 27 and 28 have been added. Claims 1-15 and 17-28 are pending. The specification has been amended to correct several minor informalities. No new matter has been added by the amendments to the claims and specification. Reconsideration of the rejections set forth in the Office Action is respectfully requested in light of the above amendments and the following remarks.

Rejection Under 35 U.S.C. §112

Claims 15 and 24 stand rejected under 35 U.S.C. §112, ¶2, on the grounds stated in paragraph 2 of the Official Action.

Regarding claim 15, the Office Action questions the meaning of the recited “web surface temperature.” As explained at paragraph [0088] of the present specification, in an embodiment of the claimed method, the web of a carrier layer, after coating, is dried on the coated side of the carrier layer to dry the barrier layer at a web surface temperature and is cured at another web surface temperature. Applicants respectfully submit that one having ordinary skill in the art would understand the meaning of the recited “web surface temperature” in light of this description.

Claim 24 has been amended to depend from claim 19 to provide antecedent basis for the recited “layer of thermoplastics.”

Withdrawal of the rejection is respectfully requested.

First Rejection Under 35 U.S.C. §103

Claims 1-11, 13, 14, 18, 25 and 26 stand rejected under 35 U.S.C. §103(a) over U.S. Patent No. 3,499,820 to Desaulniers ("Desaulniers") in view of WO 98/09812 to Berlin et al. ("WO '812"). The grounds of rejection are set forth in paragraph 5 of the Office Action. The rejection is respectfully traversed.

Claim 1 recites a method of producing a laminated packaging material comprising a core layer of paper or paperboard and a barrier layer applied on one side of the core layer. As claimed, a liquid barrier composition including a dispersion or solution of a polymer and an inorganic laminar compound is applied as a barrier layer on at least one side of a carrier layer, which consists of paper. The at least one side of the carrier layer has a smoothness of up to 200 Bendtsen. The liquid barrier composition is dried during heating for driving off the dispersant or solvent, whereafter the carrier layer with the applied, dried barrier layer is combined and permanently united with one side of the core layer. Support for the amendments to claim 1 is provided, for example, at paragraphs [0056] and [0060] of the present specification.

The claimed method overcomes problems associated with other laminated packaging materials. As explained at paragraph [0058] of the present specification, it was determined that one reason that a high performance barrier property was not achieved, for example, in WO 97/16312 may be that the paperboard core layer lacked the requisite degree of impermeability so that an aqueous solution of starch may have penetrated the surface. Such penetration by the starch solution may prevent the formation of a smooth and unbroken surface of the starch layer. The starch layer may also have cracked during drying of the paperboard. As explained at

paragraph [0059] of the present specification, the paperboard used in WO 97/16312 would typically have been expected to have a surface smoothness of 500-600 Bendtsen. This level of smoothness may in itself have prevented the starch layer from being smooth and unbroken and provided for thin areas that provide a path for oxygen transmission.

As further explained at paragraph [0059] of the present specification, it has been determined that in order to avoid cracks, punctures or deformations in the barrier composition layer of a starch or starch derivative layer and inorganic laminar compound, in a preferred embodiment the surface on which the barrier layer is applied is smooth. As recited in claim 1, the at least one side of the carrier layer on which the barrier layer is applied has a smoothness of up to 200 Bendtsen.

Desaulniers and WO '812 fail to suggest the method recited in claim 1. Desaulniers discloses a method for preparing transparent laminate films from polymer-diluent films (column 3, lines 28-33). Desaulniers discloses suitable substrates that include paper (column 3, lines 34-43). According to Desaulniers, the films can be bonded to a base or to the substrate (column 4, lines 20-27). Desaulniers is silent regarding the smoothness of the substrate and does not suggest a paper substrate that has at least one side with a smoothness of up to 200 Bendtsen, as recited in claim 1. As explained above, the claimed carrier layer including at least one side having a smoothness of up to 200 Bendtsen can advantageously avoid penetration of the dispersion or solution of a polymer and an inorganic laminar compound on the at least one side of the carrier layer having smoothness of up to 200 Bendtsen.

WO '812 fails to cure the deficiencies of Desaulniers regarding the method recited in claim 1. WO '812 discloses packaging laminates. The laminate 20 shown in Figure 2 of WO '812 includes a core layer 23 of paper or paper board, an outer liquid barrier layer 11 and an oxygen gas barrier layer 22 bonded to the core layer 23. However, WO '812 fails to disclose or suggest at least the claimed features of "a liquid barrier composition including a dispersion or solution of a polymer and an inorganic laminar compound is applied as a barrier layer on at least one side of a carrier layer consisting of paper, said at least one side of the carrier layer having a smoothness of up to 200 Bendtsen (emphasis added). Accordingly, WO '812 fails to suggest modifying Desaulniers' method of making a laminate to result in the method recited in claim 1.

The Office Action asserts that it would have been obvious to apply Desaulniers' laminate to the paperboard core of WO '812. Applicants respectfully disagree. Desaulniers repeatedly emphasizes that the laminate is self-supporting (see, e.g., column 1, lines 14-15; column 1, lines 30-31; column 1, lines 41-42; column 1, lines 58-60; column 1, lines 61-62; column 2, lines 17-18; column 2, line 47; column 2, lines 55-56; column 3, lines 44-45; column 3, lines 56-57; column 3, lines 61-62 and column 3, lines 71-72). In light of this disclosure, Desaulniers clearly would have led one having ordinary skill in the art away from applying the self-supporting laminate on the core disclosed by WO '812.

The applied references provide no motivation to apply Desaulniers' laminate on the WO '812 core because Desaulniers discloses that the laminate already successfully achieves its intended object of being self-supporting. Merely because reference teachings may be combined does not render the resulting combination

obvious; rather, the references must also provide some suggestion of the desirability of the combination. See, for example, In re Fritch, 13 USPQ2d 1780, 1783-84 (Fed. Cir. 1992). Accordingly, even if Desaulniers' laminate could be applied on the WO '812 core, Desaulniers and WO '812 fail to suggest any reason why such modification might be desirable and, in fact, teach away from such modification.

Moreover, the modification of Desaulniers' self-supporting laminate advanced in the Office Action would require adding the manufacturing costs and other factors associated with applying the laminate to the WO '812 core. Applicants submit that one having ordinary skill in the art would not have been motivated to modify Desaulniers' laminates in such manner without some advantage to be gained from the modification that might outweigh the disadvantages that would be required for the modification.

For the above-stated reasons, Applicants respectfully submit that the combination of Desaulniers and WO '812 fails to support any alleged *prima facie* case of obviousness regarding the method recited in claim 1. Moreover, it is submitted that the above-described unexpected, superior results achieved by the claimed method rebut any alleged *prima facie* case of obviousness. Thus, claim 1 is patentable. Dependent claims 2-11, 13, 14, 18, 25 and 26 are thus also patentable.

Therefore, withdrawal of the rejection is respectfully requested.

Second Rejection Under 35 U.S.C. §103

Claims 10-12 stand rejected under 35 U.S.C. §103(a) over Desaulniers and WO '812 and further in view of WO 97/22536 to Berlin et al. ("WO '536") on the

grounds set forth in paragraph 6 of the Official Action. The rejection is respectfully traversed.

Claims 10-12 depend from claim 1. The Office Action admits that Desaulniers and WO '812 fail to disclose the features recited in claims 10-12, but asserts that WO '536 cures the deficiencies of Desaulniers and WO '812. Applicants respectfully disagree.

WO '536 discloses a laminated packaging material. The laminated packaging material 10 shown, for example, in Figure 1 of WO '536 includes a core layer 11 of paper or paper board, outer liquid-tight coatings 12 and 13, and an oxygen-gas barrier 14. WO '536 discloses that the oxygen gas barrier layer may be laminated to the core layer by an intermediate polymer carrier layer (page 10, lines 10-13). However, regarding claim 1, WO '536 fails to disclose or suggest at least the features of "a liquid barrier composition including a dispersion or solution of a polymer and an inorganic laminar compound is applied as a barrier layer on at least one side of a carrier layer consisting of paper, said at least one side of the carrier layer having a smoothness of up to 200 Bendtsen. Accordingly, WO '536 also fails to suggest modifying Desaulniers' method of making a laminate to result in the method recited in claim 1. Thus, dependent claims 10 and 12 also are patentable over the applied references.

Therefore, withdrawal of the rejection is respectfully requested.

Third Rejection Under 35 U.S.C. §103

Claim 15 stands rejected under 35 U.S.C. §103(a) over Desaulniers and WO '812 and further in view of U.S. Patent No. 5,766,751 to Kotani et al. ("Kotani") on the

grounds set forth in paragraph 7 of the Official Action. The rejection is respectfully traversed.

Claim 15 depends from claim 1. The Office Action admits that Desaulniers and WO '812 fail to disclose the subject matter recited in claim 15, but asserts that Kotani cures the deficiencies of Desaulniers and WO '812. Applicants respectfully disagree.

Kotani discloses laminates. The Office Action has relied on Kotani for allegedly disclosing two separate drying steps for producing the laminates. However, regarding claim 1, Kotani fails to disclose or suggest at least the features of "a liquid barrier composition including a dispersion or solution of a polymer and an inorganic laminar compound is applied as a barrier layer on at least one side of a carrier layer consisting of paper, said at least one side of the carrier layer having a smoothness of up to 200 Bendtsen. Accordingly, Kotani also fails to suggest modifying Desaulniers' method of making a laminate to result in the method recited in claim 1. Thus, dependent claim 15 also is patentable over the applied references.

Therefore, withdrawal of the rejection is respectfully requested.

Fourth Rejection Under 35 U.S.C. §103

Claim 17 stands rejected under 35 U.S.C. §103(a) over Desaulniers and WO '812 and further in view of U.S. Patent No. 5,057,359 to Merdem et al. ("Merdem") on the grounds set forth in paragraph 8 of the Official Action. The rejection is respectfully traversed.

Claim 17 depends from claim 1. The Office Action admits that Desaulniers and WO '812 fail to disclose the subject matter recited in claim 17, but asserts that

Merdem cures the deficiencies of Desaulniers and WO '812. Applicants respectfully disagree.

Merdem discloses a carton blank. The Office Action has relied on Merdem for allegedly disclosing a paper laminate including a paper layer bonded to a paperboard substrate and having a weight of 25-100 g/m². As understood, the Office Action has asserted that the greaseproof paper 2 shown in the Figure of Merdem is a "carrier layer," as recited in claim 17. However, regarding claim 1, Merdem fails to disclose or suggest at least the features of "a liquid barrier composition including a dispersion or solution of a polymer and an inorganic laminar compound is applied as a barrier layer on at least one side of a carrier layer consisting of paper, said at least one side of the carrier layer having a smoothness of up to 200 Bendtsen." Accordingly, Merdem also fails to suggest modifying Desaulniers' method of making a laminate to result in the method recited in claim 1. Thus, dependent claim 17 also is patentable over the applied references.

Therefore, withdrawal of the rejection is respectfully requested.

Fifth Rejection Under 35 U.S.C. §103

Claims 19-23 stand rejected under 35 U.S.C. §103(a) over Desaulniers and WO '812, and further in view of U.S. Patent No. 5,849,125 to Kobinata et al. ("Kobinata") on the grounds set forth in paragraph 9 of the Official Action. The rejection is respectfully traversed.

Claims 19-23 depend from claim 1. The Office Action admits that Desaulniers and WO '812 fail to disclose the subject matter recited in claims 19-23, but asserts

that Kobinata cures the deficiencies of Desaulniers and WO '812. Applicants respectfully disagree.

Kobinata discloses a packaging material and process for producing the packaging material. The Office Action has relied on Merdem for allegedly disclosing features of claims 19-23. However, regarding claim 1, Kobinata fails to disclose or suggest at least the features of "a liquid barrier composition including a dispersion or solution of a polymer and an inorganic laminar compound is applied as a barrier layer on at least one side of a carrier layer consisting of paper, said at least one side of the carrier layer having a smoothness of up to 200 Bendtsen." Accordingly, Kobinata also fails to suggest modifying Desaulniers' method of making a laminate to result in the method recited in claim 1. Thus, dependent claims 19-23 also are patentable over the applied references.

Therefore, withdrawal of the rejection is respectfully requested.

Sixth Rejection Under 35 U.S.C. §103

Claim 24 stands rejected under 35 U.S.C. §103(a) over Desaulniers, Berlin et al. WO '812 and Kobinata, and further in view of U.S. Patent No. 6,071,626 to Frisk ("Frisk") on the grounds set forth in paragraph 10 of the Official Action. The rejection is respectfully traversed.

Claim 24 depends from claim 1. The Office Action admits that Desaulniers and WO '812 fail to disclose a light barrier in an adhesive extruded between a barrier layer and a paperboard core, but asserts that Frisk cures the deficiencies of Desaulniers and WO '812. Applicants respectfully disagree.

Frisk discloses a multilayer laminate. The Office Action has relied on Frisk for allegedly disclosing features of claim 24. However, regarding claim 1, Frisk fails to disclose or suggest at least the features of "a liquid barrier composition including a dispersion or solution of a polymer and an inorganic laminar compound is applied as a barrier layer on at least one side of a carrier layer consisting of paper, said at least one side of the carrier layer having a smoothness of up to 200 Bendtsen." Accordingly, Frisk also fails to suggest modifying Desaulniers' method of making a laminate to result in the method recited in claim 1. Thus, dependent claim 24 also is patentable over the applied references.

Therefore, withdrawal of the rejection is respectfully requested.

New Claims

Claim 27 depends from claim 1 and recites that "said at least one side of the carrier layer has a smoothness of up to about 150 Bendtsen." Claim 28 also depends from claim 1 and recites that "said at least one side of the carrier layer has a smoothness of up to about 100 Bendtsen." Claims 27 and 28 are supported by the disclosure at paragraph [0060] of the present specification. Claims 27 and 28 also are patentable.

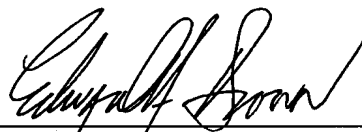
Conclusion

For the foregoing reasons, allowance of the application is earnestly solicited. Should the Examiner believe that any issues remain regarding the application, it is requested that the undersigned be contacted at the telephone number below.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

Date: July 26, 2004

By: 
Edward A. Brown
Registration No. 35,033

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620